V

(20516) Roll No. 966/020

B.Sc.(Micro.)-II Year

3498

B. Sc. (Micro.) Examination, May 2016

Molecular Biology

(B-205)

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt any *Five* questions. All questions carry equal marks.

1. Give a brief account of different kinds of RNAs known in the living systems. Discuss the structure and function of tRNA. 10

2. Write short notes on the following : 2½×4=10
   (a) Circular DNA
   (b) Nucleotides
   (c) Single stranded DNA
   (d) Transduction.

3. What are the different approaches made for the codon assignment? 10

4. Describe the experiments in detail which initially demonstrated that DNA is a genetic material. 10

5. Explain the following: 2½×4=10

(a) Genetic code is triplet

(b) Genetic code is degenerate

(c) Genetic code is non-ambiguous

(d) Genetic code is universal.

6. What is 'Central Dogma' of molecular biology ? Briefly give the mechanism of polypeptide synthesis. 10

7. Write short notes on the following: 2½×4=10

(a) Cistron

(b) 'lac' operon

(c) Feedback inhibition

(d) Corepressor.

8. Give an account of the steps involved in the mechanism of mRNA translation in the form of polypeptide in prokaryotes. 10

9. Write short notes on the following : 5×2=10

(a) Inducer and corepressor

(b) Negative and positive control of transcription.

10. What do you mean by regulation of 'gene expression'? Highlight regulation with the help of 'operon model'. 10

(20518) Roll No. 16935917

B. Sc. (Micro.)-II Year

3498

B. Sc. (Micro.) Examination, May 2018

Molecular Biology

(B-205)

Time : Three Hours] *[Maximum Marks : 50*

Note : Answer any *Five* questions. All questions carry equal marks.

1. Discuss the different forms of DNA. Which form of DNA was proposed by Watson & Crick. 10

2. What is 'Central Dogma' of Molecular Biology ? Briefly give the mechanism of polypeptide synthesis. 10

3. Give a brief account of different kinds of RNAs known in the living systems. Discuss the structure and function of tRNA. 10

4. Explain the following : 5×2=10

(a) Replication is a semiconservative process in terms of DNA

(b) Replication fork.

5. Give difference between the following : 5×2=10

(a) Prokaryotic and eukaryotic DNA polymerase

(b) Prokaryotic and eukaryotic protein synthesis.

6. Write short notes on the following : 2½×4=10

(a) Cairns model

(b) Clover Leaf model of Holley (tRNA)

(c) The genetic code is a triplet code

(d) The wobble hypothesis.

7. Write short notes on the following : 2½×4=10

(a) Transposons

(b) Translocation in protein synthesis

(c) Chain termination codons

(d) Teminism.

8. Explain the regulation of gene expression with the help of 'Operon model'. 10

9. Write short notes on the following : 5×2=10

(a) Operator gene

(b) Promotor gene.

10. Write short notes on the following : 2½×4=10

(a) DNA transformation

(b) Transduction

(c) Barbara McClintock

(d) Leaderberg and Tatum experiment.